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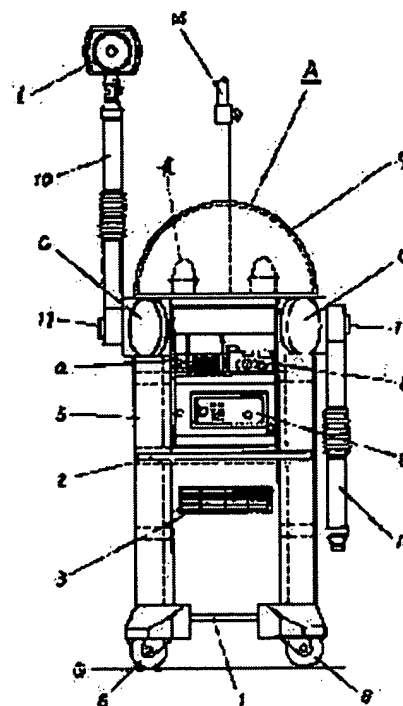
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MURAOKA TOSHIO

(54) SECURITY ROBOT SYSTEM

(57)Abstract:

PURPOSE: To deal with an unmanned disaster prevention and crime prevention, and an unmanned monitoring, inside and outside a room, rapidly and systematically, by installing disaster preventive and crime preventive apparatuses in which necessary sensors are attached, related devices, and the like, to the robot outer casing which can self-ravel, and can be fixed to an adequate setting place.

CONSTITUTION: A robot outer casing 5 with a cylindrical form, whose lower opening is covered by a bottom plate 1 is provided, and a handle 2 for moving and a slit 3 for ventilation are provided at the middle part in the vertical direction. While wheels 6 for moving are provided at the lower side of the bottom plate 1, a stopper which can be locked to a set surface by operating a lever is provided. In the robot outer casing 5, fire fighting and crime preventive apparatuses such as a speaker with highly directional microphone a, a camera and a camera video b, a human body sensor c, and a fire extinguisher are provided. Furthermore, at the left and the right upper parts on the peripheral



surface of the phriphery wall of the robot outer casing 5, a robot fixing bar 14 which can regulate its length, in which a smoke sensor, a gas leak sensor, and the like are installed at the upper end is provided, as well as an arm 10 for lighting apparatus installing is journalled.

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CLAIMS

[Claim(s)]

[Claim 1] The security robot system characterized by incorporating disaster prevention, a crime prevention device, associated equipment, etc. which have the function which can move hand control or automatically (running by themselves), and attached the necessary sensor to the robot outer case object which is fixable to an installation suitably.

[Claim 2] The security robot system according to claim 1 which established the elastic robot fixed device and the horizontally elastic robot fixed device in the vertical direction at the robot outer case object.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to the security robot system the disaster prevention in a residence, a store, a firm, a school, etc., and for crime prevention.

[0002]

[Description of the Prior Art] The sensor by which the disaster prevention in a residence, a store, a firm, and a school and a crime prevention system are usually marketed by head lining, the wall, the aperture, etc., and the device for disaster prevention and crime prevention are installed conventionally.

[0003]

[The trouble which invention makes solution ****] However, by the aforementioned conventional system, in rented houses, such as a rental apartment and a lease store, when these systems were introduced, whenever the borrower replaced, it was easy to produce a trouble between a new borrower and a new landlord, or the commissioned company at the costs of disaster prevention and a crime prevention device, the burden of a construction cost required for demounting, and there was a trouble that a repair work was fundamentally impossible etc. in a rented house.

[0004]

[Means for Solving the Problem] It is a thing aiming at solving these troubles, and this invention has the function which can move hand control or automatically, it is a security robot system incorporating disaster prevention, a crime prevention device, associated equipment, etc. which attached the necessary sensor to the robot outer case inside of the body which is fixable to an installation suitably, and copes with quickly and synthetically indoor and outdoor uninhabited disaster prevention, crime prevention, and an uninhabited monitor.

[0005]

[An operation of this invention] The security robot of this invention is put on above the floor level [in the building which serves as uninhabited for Nighttime, a holiday or going out etc.] in a residence, a store, a firm, a school, etc. It fixes to the condition of having moved to the necessary location by hand control or remote control, and having been stabilized. If a main switch is turned ON, the device and associated equipment of the total **** will be in the condition which can operate, and since each device operates according to a function at the time of an emergency or an abnormal occurrence and the information is transmitted to a monitor pin center, large, it can respond quickly synthetically.

[0006]

[Effect of the Invention] By the automatic control according [this invention] to hand control or remote control, by being able to move to a required location suitably at any time, and being able to install, and being able to fix to a necessary location, and operating a main switch to ON, disaster prevention, the crime prevention device, and associated equipment of the total **** installed inside the robot outer case object will be in an operating state, and can do correspondence quickly [indoor and outdoor uninhabited disaster prevention, crime prevention, or an uninhabited monitor] and synthetically. Moreover, the construction of this invention by installation is unnecessary, and it has the outstanding effectiveness with

the practical value of being able to provide for a user by approaches, such as lease or a rental, while it has effectiveness, such as not spoiling the damage on indoor or the fine sight by construction.

[0007]

[Example] A drawing explains the example of this invention below.

[0008]

[Example 1] drawing 1 thru/or drawing 3 -- a cylindrical shape -- lower part opening -- a bottom plate 1 -- a tegmentum -- carrying out -- the vertical direction pars intermedia -- Toride 2.2 for migration, and the slit 3 for aeration (entirely) -- moreover, the robot outer case object 5 which has the door 4 for fire extinguisher receipts and payments in the lower part forms the stopper 8.8 which a lower limit side goes up and down by actuation of a lever 7 in contact with wheel 6.6 for migration to the installation side G in the inferior surface of tongue of a bottom plate 1.

[0009] In the robot outer case object 5, for example, disaster prevention, a crime prevention device, [a loudspeaker with a sound-collecting microphone (a), a camera and a video camera (b), a body sensor (c), a fire extinguisher (d), etc.], etc., Associated equipment (for example, [a transmitter (e), a relay box (f), a remote control terminal unit (g), etc.] etc.) It installs in the part which does not have trouble in each device and equipment demonstrating the function, and the crown-ed of the dome 9 fabricated in the shape of a semi-sphere with the glass or the plastic sheet of translucency is carried out above the robot outer case object 5, and a patrol lamp (h) is installed inside the interior.

[0010] In the peripheral face right-and-left upper part of the peripheral wall of the robot outer case object 5, from a perpendicular lower part, 180 degrees of these arms 10.10 rotate to the perpendicular upper part, and they **** suitably the other end of the arm 10.10 for lighting device attachment which equips a point with the lighting device for cameras (i) with a shaft 11 possible [immobilization]. In the peripheral face of the tooth-back peripheral wall of the robot outer case object 5, the lower part of the robot fixed lever 14 which can be adjusted to arbitration is fixed for the die length which stuck the buffer boards 13, such as an urethane cushion, on the top face of a base plate 12 established in upper limit to the shaft orientations of the robot outer case object 5, and parallel, a disaster prevention device (for example, [an ionization smoke detector (j), a gas leakage sensor (k), etc.] etc.) is attached in the inferior surface of tongue of said base plate 12, and the security robot A by this invention be constituted. Among ****, (l) is an oscillating concern sensor and (m) is an earthquake concern machine.

[0011]

[Example 2] From drawing 4 and drawing 5 , it sets to the aforementioned security robot A. For the robot fixed lever 14 Instead of, Two or more levers of the crossover lever 17 which crossed in the center section and enabled rotation of two levers 15.15 by the pin 16 The pair of the flexible rod cell 19 connected by pin 18.18 in the shape of a panda graph

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EFFECT OF THE INVENTION

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by the same device as said flexible rod cell may counter a longitudinal direction. Telescopic motion is made horizontally possible, the another side tips of flexible rod cell 19' and 19' are formed successively by base plate 20', buffer board 21', such as an urethane cushion, is stuck on a way side face outside this base plate 20', and elastic robot longitudinal direction fixed device 22' is constituted in a longitudinal direction.

[0013] It explains according to the condition of using an operation of this invention below. The aforementioned security robot A is assigned in the floor line in the building which serves as uninhabited for Nighttime, a holiday or going out, etc. in a residence, a store, a firm, a school, etc. While moving to a necessary location by hand control or remote control, operating a lever 7, descending a stopper 8.8 and carrying out the pressure welding of the lower limit side to the installation side G (floor line) Lengthen the robot fixed lever 14 to the perpendicular upper part, and it fixes until the buffer board 13 contacts head lining. Install Robot A in the condition of having been stabilized in the floor line, and, in the case of an example 2, the buffer board 21 of the robot vertical direction fixed device 22 contacts head lining. It extends until buffer board 21 of robot longitudinal direction fixed device 22" contacts the side-attachment-wall inside of the room, Robot A is installed in a floor line, 10.10 is rotated to the perpendicular upper part, the arm for lighting device attachment is fixed, and the lighting device for cameras (spotlight) (i) is attached in a point.

[0014] Next, if a main switch is turned ON, the device and associated equipment of the total **** will be in the condition which can operate, at the time of an abnormal occurrence, each device and associated equipment operate according to a function, the information is automatically transmitted to the monitor pin center, large K, it corresponds promptly, a casualty is prevented beforehand, and damage is kept to the minimum.

[0015] If each device of this invention and the actuation point of associated equipment are shown and a body concern machine (infrared radiation, an acoustic wave, and heat) (c) is concerned in abnormalities, drawing 6 While it transmits to the monitor pin center, large K through a transmitter (e) immediately and the lighting device for (Camera (** video camera) b) patrol (lamp h) cameras (i) operates through a relay box (f) to coincidence (transmission is not carried out) It comes out of the loudspeaker with a noise microphone (a) to utter and threaten the sound outside the interior of a room and voice from the monitor pin center, large K through a transmitter (e) from a remote control terminal unit (g). In order that a smoke concern machine (j) may operate at the time of the outbreak of a fire, a gas leakage concern machine (k) may operate at the time of gas leakage and an earthquake concern machine (m) and an oscillating sensing sensor (l) may operate at the time of generating of earthquake or polar zone-vibration etc., information is immediately notified to monitor NTA K by the telephone line through a transmitter (e).

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] The front view of this invention

[Drawing 2] The side elevation which omitted a part of this invention

[Drawing 3] Rear view which fractured a part of this invention

[Drawing 4] The front view showing the attachment point of the robot vertical direction fixed device by the example 2 of this invention, and a robot longitudinal direction fixed device

[Drawing 5] The top view of drawing 4

[Drawing 6] Each device of this invention, and the actuation point Fig. of associated equipment

[Description of Notations]

A Security robot

1 Bottom Plate

2 Toride for Migration

3 Slot for Aeration

4 Door for Fire Extinguisher Receipts and Payments

5 Robot Outer Case Object

6 Wheel for Migration

7 Lever

8 Stopper

9 Dome

10 Arm for Lighting Device Attachment

11 Shaft

12 Base Plate

13 Buffer Board

14 Robot Fixed Lever

15 Lever

16 Pin

17 Crossover Lever

18 Pin

19 Flexible Rod Cell

20 Base Plate

21 Buffer Board

22 The Robot Vertical Direction Stationary Equipment

22' Robot longitudinal direction fixed device

A loudspeaker with a sound-collecting microphone

b Camera (** video camera)

c Body concern machine (infrared radiation, an acoustic wave, and heat)

d Fire extinguisher

e Transmitter

f Relay box
g Remote control terminal unit
h Patrol lamp
i Lighting device for cameras
j Smoke concern machine
k Gas leakage concern machine
l Oscillating concern sensor
m Seismic sensor

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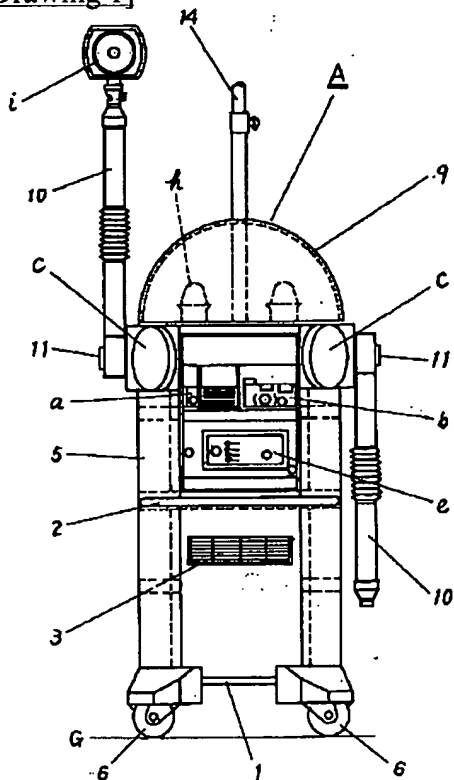
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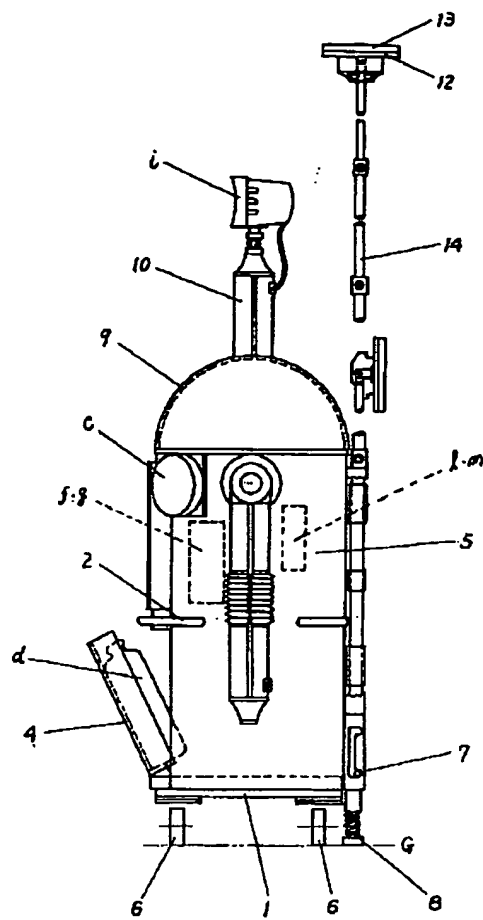
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DRAWINGS

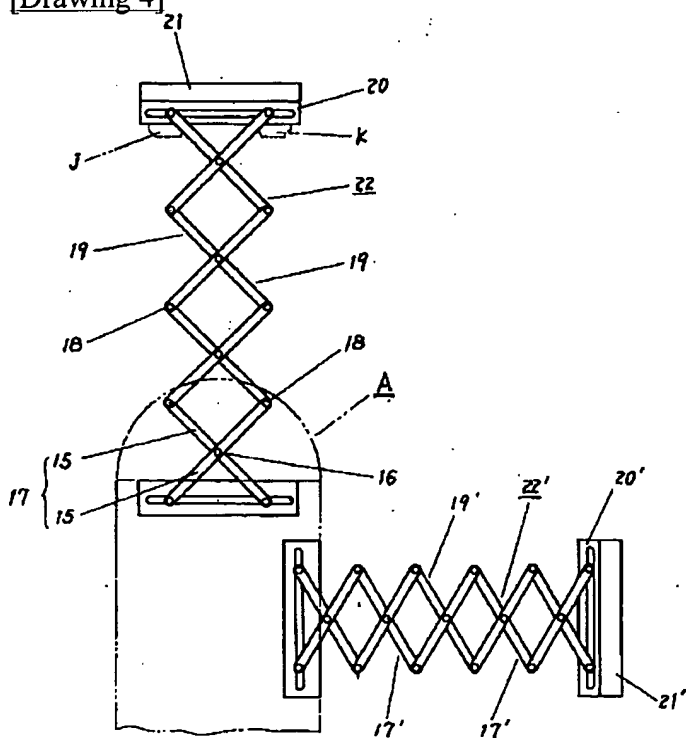
[Drawing 1]



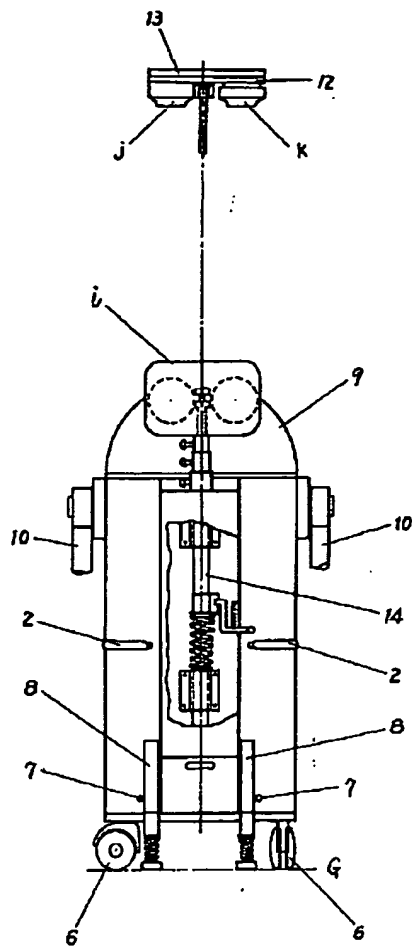
[Drawing 2]



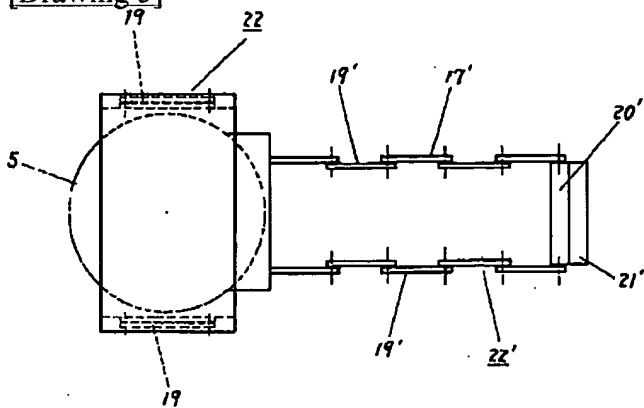
[Drawing 4]



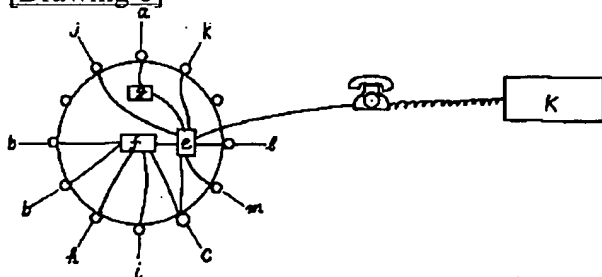
[Drawing 3]



[Drawing 5]



[Drawing 6]



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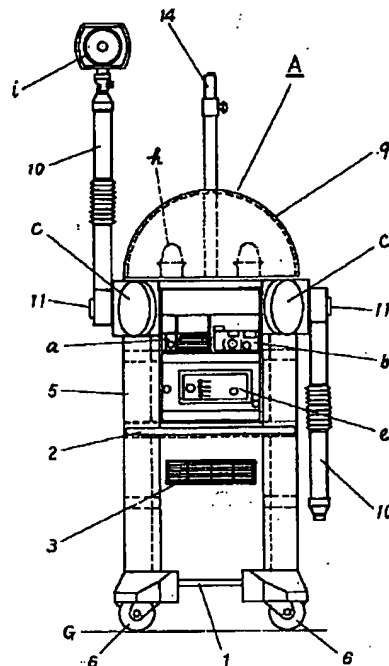
(54) 【発明の名称】 セキュリティロボットシステム

(57) 【要約】 (修正有)

【目的】 人体関知器(赤外線・音波・熱)及び各種の防災、防犯機器等と関連装置を組み込み、メインスイッチをONにすれば総べての機器は作動可能な状態となり、非常事態や異常発生時には夫々の機器は機能に応じて作動し、その情報を監視センターに送信するロボット体を、何時でも必要な場所に適宜移動して設置可能とし、室内及び室外の無人防災、防犯や無人監視を迅速且つ総合的に対応するセキュリティロボットシステムを提供する。

【構成】 1、手動又は自動的に移動(自走)できる機能を有し、適宜設置場所に固定可能なロボット体内に所要のセンサーを付設した防災、防犯機器等と関連装置を組み込んだことを特徴とするセキュリティロボットシステム。

2、ロボット外筒体5に上下方向に伸縮自在のロボット固定機構と、水平方向に伸縮自在のロボット固定機構を設けたセキュリティロボットシステム。



【特許請求の範囲】

【請求項1】 手動又は自動的に移動（自走）できる機能を有し、適宜設置場所に固定可能なロボット外筒体に、所要のセンサーを付設した防災、防犯機器及び関連装置等を組込んだことを特徴とするセキュリティロボットシステム。

【請求項2】 ロボット外筒体に上下方向に伸縮自在のロボット固定機構と、水平方向に伸縮自在のロボット固定機構を設けた請求項1記載のセキュリティロボットシステム。

【発明の詳細な説明】

【0001】

【産業上の利用分野】本発明は住宅、店舗、会社、学校等に於ける防災、防犯用のセキュリティロボットシステムに関するものである。

【0002】

【従来の技術】従来住宅、店舗、会社、学校に於ける防災、防犯システムは通常天井、壁、窓等に市販されているセンサーや防災、防犯用機器が設置されている。

【0003】

【発明が解決しようとする問題点】然し前記の従来のシステムでは、賃貸マンションや賃貸店舗等の借家では、これらのシステムを導入する場合、借主が代わる度に防災、防犯機器の費用や取外しに要する工事費の負担等で、新規の借主と家主や管理会社間でトラブルが生じ易く、又借家では基本的に改修工事が出来ない等の問題点があった。

【0004】

【問題点を解決するための手段】本発明はこれらの問題点を解決することを目的としたもので、手動又は自動的に移動できる機能を有し、適宜設置場所に固定可能なロボット外筒体内に、所要のセンサーを付設した防災、防犯機器及び関連装置等を組込んだセキュリティロボットシステムで、室内及び室外の無人防災、防犯や無人監視を迅速かつ総合的に対処するものである。

【0005】

【本発明の作用】本発明のセキュリティロボットを、住宅、店舗、会社、学校等で、夜間や休日又は外出等のため無人となる建物内の床上に置き、手動又はリモートコントロール等により所要の場所に移動して安定した状態に固定し、メインスイッチをONにすれば総べての機器及び関連装置は作動可能な状態となり、非常事態や異常発生時には夫々の機器は機能に応じて作動し、その情報を監視センターに送信する為、迅速で且つ総合的に対応することが出来るものである。

【0006】

【本発明の効果】本発明は、手動又はリモートコントロール等による自動制御により、何時でも必要な場所に適宜移動して設置可能であり、且つ所要位置に固定することが出来メインスイッチをONに操作することによりロ

ボット外筒体に内設した総べての防災、防犯機器及び関連装置は作動状態となり、室内及び室外の無人防災、防犯や無人監視が迅速且つ総合的に対応ができる。又本発明は、設置による工事が不要で、工事による室内の損傷や美観を損なう事がない等の効果を有すると共に、リース或いはレンタル等の方法により利用者に提供出来る等の実用的価値がある優れた効果を有するものである。

【0007】

【実施例】以下本発明の実施例を図面によって説明する。

【0008】

【実施例1】図1乃至図3より円筒形で下方開口部を底板1により被蓋し、上下方向中間部に移動用取手2、2及び通気用スリット（ガラリ）3を、又下部に消火器出入れ用扉4を有するロボット外筒体5は、底板1の下面に移動用車輪6、6……と、下端面が設置面Gに接しレバー7の操作により昇降するストッパー8、8を設ける。

【0009】ロボット外筒体5内には防災、防犯機器、〔例えば、集音マイク付スピーカー（a）、カメラ及びビデオカメラ（b）、人体感知器（c）、消火器（d）等〕と、関連装置〔例えば送信機（e）、リレーボックス（f）、リモコン端末装置（g）等〕を、夫々の機器及び装置がその機能を発揮するのに支障のない箇所に設置し、ロボット外筒体5の上方には、透光性のガラス又はプラスチック板により半球状に成形したドーム9を被冠し、内部にパトロールランプ（h）を内設する。

【0010】ロボット外筒体5の外周壁の外周面左右上部には、先端部にカメラ用照明機器（i）を装着する照明機器取付用アーム10、10の他端部を該アーム10、10が垂直下方より垂直上方に180°回転し、適宜固定可能に軸11により軸設する。ロボット外筒体5の背面外周壁の外周面には、上端に設けた台板12の上面にウレタンクッション等の緩衝盤13を貼着した、長さを任意に調節可能なロボット固定杆14の下部を、ロボット外筒体5の軸方向と平行に固着し、前記台板12の下面に防災機器〔例えば煙感知器（j）、ガス漏れ感知器（k）等〕を取り付けて本発明によるセキュリティロボットAを構成する。尚図中（1）は振動関知センサー、（m）は地震関知器である。

【0011】

【実施例2】図4及び図5より、前記のセキュリティロボットAにおいて、ロボット固定杆14に代わり、二本の横杆15、15を中央部で交差してピン16により回転自在とした交差杆17の複数杆を、バンダグラフ状にピン18、18……により連結した伸縮杆体19の一对を、最下端の横杆15、15の一端を前記ロボット外筒対5の外周壁の上部外周面に対向する状態で固定し、伸縮杆体19、19の上端を台板20により連設して、該台板20の上面にウレタンクッション等の緩衝盤21を

設けた上下に伸縮自在のロボット上下方向固定機構22を構成し、台板20の下面に煙関知器(j)、ガス漏れ感知器(k)を取り付ける。

【0012】ロボット外筒体5の外周壁の側周面適所には、前記伸縮杆体と同一機構による伸縮杆体19'・19'が左右方向に対向する如く夫々の片側交差杆17'・17'・17'・17'の端部を固定して、水平方向に伸縮可能とし、伸縮杆体19'・19'の他方先端を台板20'により連結して、該台板20'の外方側面にウレタンクッション等の緩衝盤21'を貼着して横

方向に伸縮自在のロボット横方向固定機構22'を構成する。
【0013】以下本発明の作用を使用する状態により説明する。前記のセキュリティロボットAを、住宅、店舗、会社、学校等で、夜間や休日又は外出等のため無人となる建物内の床面に置き、手動又はリモートコントロールにより所要の場所に移動し、レバー7を操作してストッパー8、8を下降し下端面を設置面G(床面)に圧接すると共に、緩衝盤13が天井に当接するまでロボット固定杆14を垂直上方に伸ばして固定して、ロボット

Aを床面に安定した状態で設置し、実施例2の場合はロボット上下方向固定機構22の緩衝盤21が天井に当接し、ロボット横方向固定機構22'の緩衝盤21'が部屋の側壁内面に当接するまで引き延ばしてロボットAを床面に設置して、照明機器取付用アームを10、10を垂直上方に回転して固定し、先端部にカメラ用照明機器(スポットライト)(i)を取り付ける。

【0014】次にメインスイッチをONにすれば総べての機器及び関連装置は作動可能な状態となり、異常発生時には夫々の機器や関連装置は機能に応じて作動し、その情報を自動的に監視センターKに送信し迅速に対応して大事故を未然に防止し、被害を最小限に食い止める。

【0015】図6は本発明の各機器及び関連装置の作動要領を示すもので、人体関知器(赤外線・音波・熱)(c)が異常を関知すると、直ちに送信機(e)を介して監視センターKに送信し、カメラ(含ビデオカメラ)(b)、パトロールランプ(h)、カメラ用照明機器(i)は同時にリレーボックス(f)を介して作動(送信はしない)すると共に、雑音マイク付スピーカ(a)はリモコン端末装置(g)から送信機(e)を介して、監視センターKより室内外の音や、声を出して威嚇する事ができる。火災発生時には煙関知器(j)が作動し、ガス漏れ時にはガス漏れ関知器(k)が作動して、地震又は極部的振動などの発生時には地震関知器(m)及び振動感知センサー(1)が作動するため、直ちに送信機(e)を介して電話回線で情報を監視センターKに通報する。

【図面の簡単な説明】

【図1】 本発明の正面図

【図2】 本発明の一部を省略した側面図

【図3】 本発明の一部を破断した背面図

【図4】 本発明の実施例2によるロボット上下方向固定機構及びロボット横方向固定機構の取付要領を示す正面図

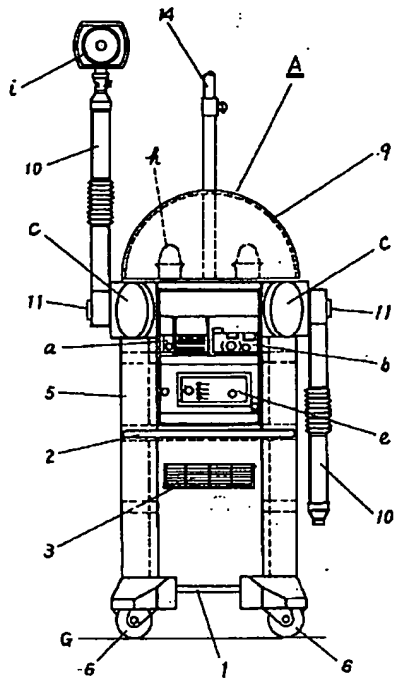
【図5】 図4の平面図

【図6】 本発明の各機器及び関連装置の作動要領図

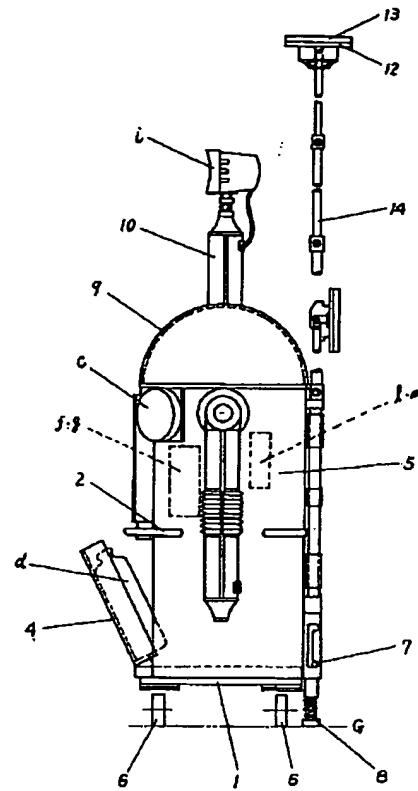
【符号の説明】

- A セキュリティロボット
- 1 底板
- 2 移動用取手
- 3 通気用スロット
- 4 消火器出し入れ用扉
- 5 ロボット外筒体
- 6 移動用車輪
- 7 レバー
- 8 ストッパー
- 9 ドーム
- 10 照明機器取付用アーム
- 11 軸
- 12 台板
- 13 緩衝盤
- 14 ロボット固定杆
- 15 横杆
- 16 ビン
- 17 交差杆
- 18 ビン
- 19 伸縮杆体
- 20 台板
- 21 緩衝盤
- 22 ロボット上下方向固定機構
- 22' ロボット横方向固定機構
- a 集音マイク付スピーカー
- b カメラ(含ビデオカメラ)
- c 人体関知器(赤外線・音波・熱)
- d 消火器
- e 送信機
- f リレーボックス
- g リモコン端末装置
- h パトロールランプ
- i カメラ用照明機器
- j 煙関知器
- k ガス漏れ関知器
- l 振動関知センサー
- m 地震感知器

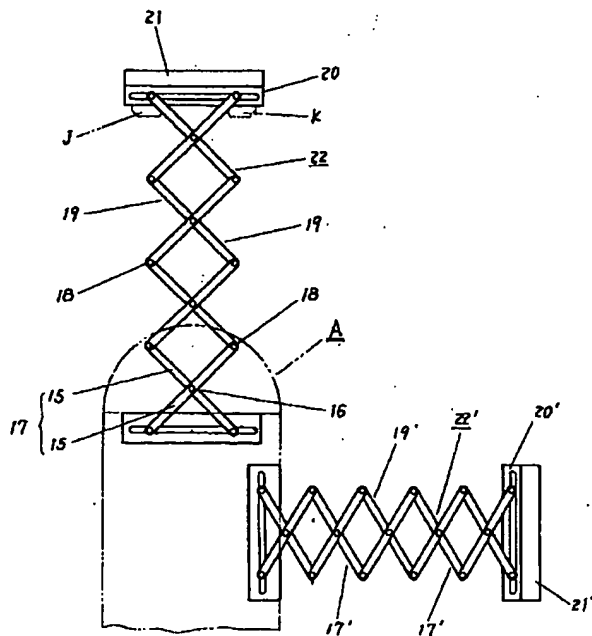
【図1】



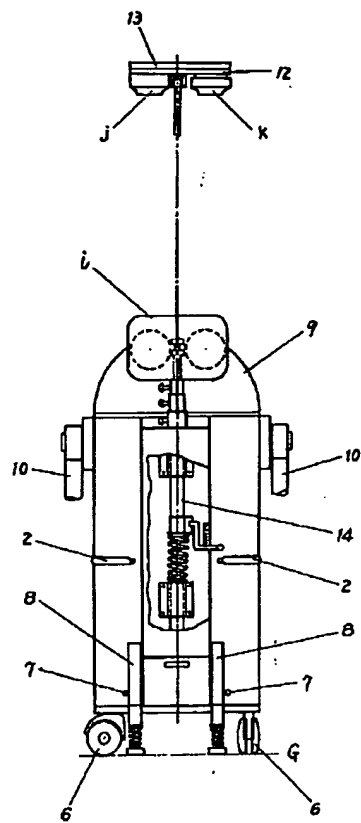
【図2】



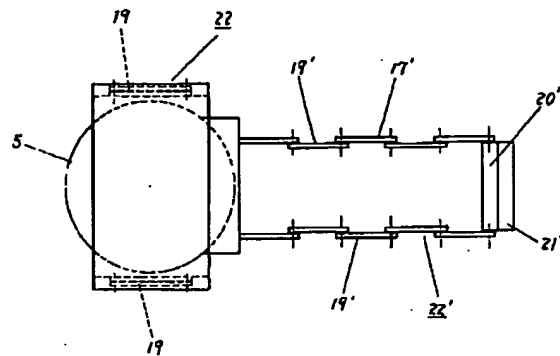
【図4】



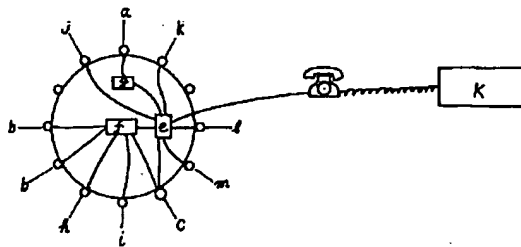
【図3】



【図5】



【図6】



フロントページの続き

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